Karam M. Morgan

karammaher.morgan@gmail.com | (+20)1280516938
LinkedIn | GitHub

Education

Texas A&M University, BSc. in Biomedical Engineering and Computer Science Jan. 2024 – Jan. 2029
GPA: 3.8/4.0
Relevant Coursework: Engineering Mathematics I, Engineering Lab I - Computation, General Chemistry for Engineering Students, General Chemistry Lab, Physics I, Data Structures and Algorithms, Operating Systems, Computer Networks

Stanford University, Visiting Student, Dept. of Computer Science Jun. 2024 – Aug. 2024
GPA: 3.9/4.0
Relevant Coursework: Introduction to Programming Methodology, Programming Abstractions, Mathematical Foundations of Computing, Computer Systems, Operating Systems

Professional Experience

Software Engineer Intern, Palm Jun. 2025 – Aug. 2025
Smart Village, Egypt

- Contributed to the back-end development of the Palm asset management system, applying system design and clean code principles.
- Enhanced back-end reliability by integrating `minLockupPeriod` and `maxLockupPeriod` fields into the `RiskOffering` entity using **NestJS** and **TypeORM**, improving modularity and reducing technical debt.
- Improved authentication flows by refactoring the Merchant and Admin OTP repositories, introducing a conditional log debugging utility, increasing the debugging efficiency by **35%**.
- Optimized KYC module by removing the relation between KYC entity and User Contract entity, simplifying schema design, and reducing query complexity.
- Migrated database schema by converting the city text field into `cityId` (foreign key), ensuring data normalization and improving query performance by **20%** on contract lookups.
- Collaborated with senior engineers and managers to run services in production and development environments, ensuring robust testing and deployment.
- Practiced Git/GitHub workflows, CI/CD pipelines (GitHub Actions), and Docker containers for real-world DevOps scenarios.

Mentee, DIH Deloitte Mentorship Program Jul. 2025 – Aug. 2025
Selected in the Deloitte Innovation Hub Mentorship Program under Eng. Mina Nader, focusing on DevOps and cloud-native practices.

- Storng understanding of implementation for CI/CD pipelines using GitHub actions.
- Containerized applications with Docker for consistency across environments.
- Gained mentorship in DevOps culture, system reliability, and scalable cloud practices.

Research Software Engineer, Jendi.AI Nov. 2024 – May. 2025
At Jendi.AI, we leverage AI-driven insights from wearable health data to prevent burnout and improve productivity.

- Designed scalable back-end services with Java + Spring Boot, improving request handling efficiency by **40%**.
- Researched AI-driven burnout detection models, improving accuracy by **15%**.
- Enhanced analytics for HRV and stress metrics in collaboration with AI/product teams.
- Ensured GDPR/HIPAA compliance for sensitive health data.
- Reduced response time by **30%** using caching and load balancing strategies.

C++ Developer Intern, NeuronetiX Sep. 2024 – Oct. 2024

- Optimized C++ algorithms for neural network simulations, improving the execution speed by **25%**.
- Refactored memory management, reducing system crashes by **40%**.
- Multithreading implemented to enhance parallel processing capabilities.
- Conducted code reviews and debugging to maintain high quality.

Full Stack Intern, CodeAlpha Aug. 2024 – Sep. 2024

- Developed scalable API endpoints and front-end components using Node.js and React.
- Improved load times by **35%** by optimizing queries and API handling.
- Integrated authentication and authorization systems.
- Collaborated with cross-functional teams to deploy features efficiently.

Software Engineering Fellow, Headstarter AI Jul. 2024 – Sep. 2024

- Developed a task portal with Express.js/Node.js, simplifying task management.
- Built serverless APIs on AWS Lambda with a **99%** uptime guarantee.
- Applied software engineering best practices in scalable system design.

Undergraduate Research Engineer, Cairo University Oct. 2023 – Aug. 2024

- Built a VR-based endoscopy simulator for Arthroplasty and GI Endoscopy training.
- Researched medical software for Essential Tremor, optimizing tremor reduction algorithms.

Additional Experience & Awards

Biomedical Informatics Reviewer, Interpretable Machine Learning in Healthcare Workshop Jun. 2023 – Jul. 2023

- Reviewed AI/ML healthcare papers for rigor, ethics, and thematic relevance.

Best Undergraduate Researcher Award Mar. 2024
Granted by the Dept. of Biomedical & Systems Engineering, Cairo University.

Publications

Zahid, M. J., Mavani, P., Awuah, W. A., Alabdulrahman, M., Punukollu, R., Kundu, A., Mago, A., Maher, K., Adebusoye, F. T., & Khan, T. N. (2024).
Sculpting the future: A narrative review of 3D printing in plastic surgery and prosthetic devices. Health Science Reports, 7(6).
DOI: 10.1002/hsr2.2205

Technical Skills

Programming: C#, C++, Java, Python, JavaScript, TypeScript
Backend: Django, Spring Boot, Node.js, Express.js, NestJS, Postgres, SQL Server, MongoDB, Redis
Cloud/DevOps: AWS, GCP, Docker, Kubernetes, Terraform, Git, CI/CD
Other: System Design, Distributed Systems, OOP, Algorithms, Data Structures, Microservices, Design Patterns
Soft Skills: Problem-Solving, Collaboration, Communication, Adaptability, Continuous Learning